UNIVERSITY OF MINNESOTA COMPUTER CENTER
Deadstart Systems Newsletter

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NOTICE OF CHANGES TO THE SYSTEM

Don Mears installed a change to QREC which guarantees that output files recovered by QREC will be requeued with a priority appropriate to their size and age. The change ensures that older files print sooner than newer files of similar length.

Jeff Drummond installed the following changes.

1) Jeff installed his proposed change to 1CD which treats an 82 column record like an 80 column record if the last two characters are blank (see DSN 7,4 p. 14).

2) Several areas of local code in three programs, IMS, REC and DSD, were reworked in order to save space and facilitate the installation of CTI, the R5 deadstart from disk feature.

3) The E,M-display in USERS/DSD was corrected so that CATALOG TRACK OVERFLOW is properly displayed. This failure was an oversight of the 16-word PFC conversion.

Andy Hasting's recent overhaul of secure parameter processing in BLANK and RESEX (see DSN 6,22 p. 195) was extended to include ROUTE. Andy also fixed an error in USERS/DSD wherein the program would bomb if a T-display is requested if the program is run from this console and the number of time-sharing users is large. The change simply increases a buffer.

PROPOSED CHANGES TO THE SYSTEM

XEROX 9700 SERVICE - by D. W. Mears

UCC will be providing users with the ability to get output printed on a XEROX 9700 page printing system in the near future. The 9700 can print large amounts of output quickly and with print quality nearly as good as a selectric typewriter.

The service is currently being provided on a case by case basis. When a user wants output on a 9700 he writes a tape with COPYCH or BLOCK and then arranges for operations to take the tape to a local service bureau with a 9700 and have the job run and the output brought back.

We now want to simplify the use of the 9700 service so that it will be easily available to all users. Ideally, the user should be able to send the output from a text formatter to the 9700 by just doing a route with a new disposition code. The problem is that we have no text processors which provide access to the many features available on the 9700 -- such as duplex printing, variable width characters, multiple fonts and character sizes, and different page orientations. In addition, none of the text formatters generate files of an appropriate format (full pack ASCII) for the 9700.

The User Services group is investigating ways of suitably formatting text files for the 9700 such as modifying PROSE or TROFF or writing a postprocessor with takes PROSE output and some directives and generates a file acceptable to the 9700.

Once a file is formatted for the 9700 it can then be routed to a 9700 queue. Periodically, the operators would run a utility to dump the 9700 queue to tape. The tape containing many jobs would be sent to the 9700 service bureau.

And now for the proposal. The Systems group will have to write the 9700 queue utility and other 9700 queue stuff. Files will be routed to the queue with a new disposition code DC=PP (for page printer). "PP" will take the place of the unused "DC=HR" which CDC says stands for Hard copy printer. Like "DC=PL", "PP" will be an output file type with a special device selection.

The operator called utility to dump 9700 files to tape (called QXEROX or something) will call QAC to fetch the files from the FNT, read the system sector to get the user number and other accounting information, write an accounting and routing header for the file, call 1SB to generate a standard printer banner, translate the banner to full packed ASCII, write the banner to the tape, and finally write the file to the tape.

An additional utility will have to be written which reads the accounting tape produced by the 9700 service bureau and generates messages for our account file. We currently do not know enough about the format or content of the tape to judge how difficult this will be.

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Let's Get Small - by B. E. Blasing

I propose to install the PSR 531/528 version of Cyber Loader. This version has now infamous small absolute loader incorporated into it. It also has two additional features which deserve proposal discussion.

The first is that Cyber Loader will now prompt you for additional control cards if a load sequence is not terminated. This works from time-sharing only. For example:

```
/LDSET(PRESET=ZERO)
LDR>? LOAD(LGO)
LDR>? NOGO(ABS)
NOGO(ABS)
/
```

Complicated Z control cards are no longer needed.

The second feature is that COS type binaries are (finally) no longer supported. I further propose that we augment this with a 531 modset that completely exorcises the COS binary type from the operating system.

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Two Displays - by J. J. Drummond

I. A New Display

I propose to add a new display to DSD that would display the MSAL (Mass Storage Allocation) information. For lack of a better name, I have selected "E,F" ("E,M" would be more logical, but is already in use). This display would contain the same information as the MSAL command in DSDSIM.

II. An Old Display

I propose some modifications to the existing E,M display in DSD. The motivation for these changes is a desire to be able to display some CTI-related information. This can be accomplished by borrowing some Release 5 code which, in turn, opens the door for some other improvements. The specific changes that I am proposing are:

A. Add the number of tracks remaining on the device to the display (currently, this information exists on the "E,A" display).

which are not the MERITSS machine the 74 and the 730, even though at this instant they are a 74 and a 172). Sunday, March 29 is chosen since it is the day before Spring quarter classes begin.

Why, you will probably ask, do I want to add this extra step in the login sequence? My final goal is to remove TELEX from the Cyber 74. The Cyber 74 will then become a pure batch processing machine. This will free the central memory currently used by TELEX on the 74 for use by batch jobs. The time-sharing ports that are now on the 74 will be moved to the 730. Thus, the 730 will be the real time-sharing front end for the batch machine (the 74) and for any new batch machines that may appear. This will also make it easier to eventually remove the Cyber 74 from our machine complex.

During the period when we have both the Cyber 74 and the 730, I would like to have the Cyber 74 permanent file family accessible from the 730 time-sharing system. This will most easily be done if we give each machine permanent file set a distinct family name. Let's say that the Cyber 74 family is named C74 and that the 730 family is named C730.

Each disk in the C74 family will have only one of its two accesses going to the Cyber 74; the other disk access will be connected to the 730. This will result in a less efficient Cyber 74 system, since many of its disks can be accessed from either of two channels now. The C74 permanent file family will be the only one that can be accessed from the 74. But from the 730, either the existing 730 permanent file family or the Cyber 74 permanent file family can be accessed. When a user logs in on the 730, the message FAMILY:, will appear. Either a simple carriage return, or the characters C730 followed by a carriage return, will select the 730 family. The entry of C74 followed by carriage return will select the C74 family. While time-sharing is still on the 74, users who log in there can simply hit carriage return (or C74 followed by carriage return) to get at the expected C74 permanent files.

I am hoping that the cables can be moved during spring quarter which will allow the C74 family to be shared. On the day the C74 family is introduced into the 730 system, users would see only one change. Since two permanent file families exist where there only used to be one, the "FAMILY:" message would appear at login. (TELEX only asks for a FAMILY if there is more than one found on the machine). Hence, I would like to introduce a new family name for the ECS equipment on March 29. This family will have no permanent files, but will force the "FAMILY:" message to come out at login time. Then, I hope, users will get used to hitting carriage return to continue the login sequence. No one will be surprised if the C74 family is introduced onto the 730 during spring quarter. When TELEX is eventually removed from the 74, users will simply have to start entering C74 as a response to "FAMILY:" to get the familiar permanent file family.

Some Observations on this Proposal:

1. Unfortunately, UCC documentation on how to log in will be wrong, since it will not contain anything about FAMILY. I still think we should do it, however, since I believe we will find it necessary to remove time-sharing from the 74. Current users can be told about FAMILY through a SYSNOTE and through the UCC newsletter. This will not help new users who depend on UCC guides, until they are changed. I don't know what to do about that.

2. When there are two real families on the 730 (C74 and C730), batch users can get at either family by specifying the family name as the third parameter on the USER statement. A batch user on the 730 could run a batch job on the 730 which accesses the 74 permanent file family by using: USER(usernum,passwd, C74). The usernum and passwd parameters would, of course, have to be the user number and password valid on the Cyber 74. Time-sharing users on the 730 could also use the user statement to switch between the two permanent file families. There is probably no need to emphasize this feature. Batch users will see no change from the current procedure unless they put a third parameter on the user card.

3. All C74 permanent files will be shared. Therefore, our customary distinction between shared and unshared permanent files should go away. That is, files on pack SHA should not be charged at double the normal rate. This shouldn't affect income too much since most of the shared permanent file space on SHA and all of it on SPL is used by staff user numbers anyway. The easiest way for accounting to adjust to the change will be to do all permanent file accounting on the 730. Since all files will appear there, there is no need to do permanent file accounting on the 74.

4. All the system features discussed so far are stock NOS features - this proposal calls for no programming effort by UCC. One non-stock feature is our shared queue facility, which should not change as a result of this proposal. Actually, it should benefit since there will be so many shared devices on which to place queue files.

5. When a user logs in and enters an improper family name, the system does not report that immediately. Instead, the user number and password are still requested. The whole trio of family - user number - password is then verified. If the whole set is not correct, the message: IMPROPER LOGIN, TRY AGAIN is issued. As in the past, you get four tries at it. There is no easy way to change this mechanism (stock NOS again).

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Remove Annoying "$REVERT.CCL" Message - by A. B. Hastings

This past summer, Steve Collins implemented an enhancement to REVERT processing in CCL which cleared the B-display on normal REVERTs. Before this enhancement, users were treated to "$REVERT.CCL" at the end of a CCL procedure in the Batch subsystem. Unfortunately, Steve's modification had to be removed because some users complained that they used the comment field of their REVERT statements to pass useful information.

Therefore, to please both those who wish to see the comment field, and those who do not wish to see "$REVERT.CCL", I propose that REVERT be changed to move the comment field of the REVERT control statement to the B-display. Thus, those who desire no message on a REVERT whould use:

```
$REVERT.
```

Those who wish to pass some comment on a REVERT would use:

```
$REVERT.comment
```

In addition, I propose that the REVERT statements generated by CCL itself be changed to have a blank comment field. That is, CCL should append the following three statements to the end of each procedure:

```
$REVERT.
$EXIT.
$REVERT,ABORT. PROCEDURE ABORTED.
```

instead of:

```
$REVERT.CCL
$EXIT.CCL
$REVERT,ABORT.CCL
```

WRITEUP(CCL) should be updated to reflect these changes.

SYSTEM MAINTNENACE: People and Procedures

Last Weeks System's Group Meeting - by T. W. Lanzatella

Jeff Drummond's proposal to change 1CD so that 82 column records which have columns 81 and 82 blank are truncated was approved (see DSN 7,4 p. 14).

We next took up Joe Jayne's discussion topic suggesting a formal recognition of his authority to administer to writeup file content. No one had any objections but we stipulated that Joe should prepare a policy document explaining the role of the documentation group as far as writeups are concerned. A related topic was raised and that was how do we organize the raw text files from which many of the writeup files are derived (with FMT or PROSE). Joe volunteered to start a cataloging system for raw text files.

The topic of terminals was raised. Larry announced that two Data Medias and one rebuilt Teleray were being purchased. The two Data Medias will be placed in the Lauderdale terminal room.

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Callprg and Library Tape News - by M. Riviere

On March 22, the BASIC compiler on the Library Tape will be replaced with its future version. This update is made by request of B. Sackett and since the changes to the compiler consist only of error corrections the current version will not replace the past version. BASIC 3.3 will continue as the past version. As part of this modification, the entries for future BASIC in the Callprg indices will be removed.

Also on March 22, M. Frisch will be changing IMSL on the Library Tape. The new version of IMSL will be the 8th edition of the library. Complementing the change of IMSL, the IMSL section in the IOL Libraries (MNFIOL, FN4IOL, FN5IOL and M77IOL) will also be changed.

In addition, Michael will also be modifying MINNLIB and implementing further modifications to the IOL libraries. The modifications for MINNLIB consist of replacing the routines AX1SP and CMXMPLY. In the IOL libraries, Michael will replace the Q92X8J routine and add ICOUNT. ICOUNT is an I/O routine used by TEKLIB.

Another modification for MINNLIB, also scheduled for March 22, is the replacement of the PROCPAC section with a new version where old errors are corrected. The corrections for PROCPAC were made by K. Fjelsted as one of his last contributions to UCC. Also on March 22, MNF, TSF and M77 will be replaced with their future versions. The current versions of these compilers will be available as Past Callprg products.

All of the above described modifications take place on the Cybers 74, 172 and 720.

The next set of Callprg and Library Tape modifications will be made on March 29. The deadline for modifications on that date is noon on March 19th. Please note that this is the last date for modifications to be made before the start of the spring quarter.

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Let's Clean Up UCC - by K. C. Matthews

Pack UCC has been near full for quite a while. I am planning to purge (not archive) all files which reside on pack UCC and which have not been accessed since 1 September 1980. This will happen on March 15.

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Cyber 74/172 Deadstart Dump Analysis from Friday, 20 February to Thursday, 3 March - by J. J. Drummond

Wednesday, 25 February — Cyber 74

08:57 — N.A.
A solid memory failure caused the Cyber 74 to be turned over to the CE's. The system was up again at 10:20. Another level zero deadstart was required at 11:20 to clear up a problem with the VALIDUZ file. No dumps were taken.

Friday, 27 February — Cyber 74/172

09:45 — N.A.
A power failure took both systems down. A level zero deadstart was performed on both systems - up again at 10:15. No dumps were taken.

Tuesday, 3 March — Cyber 74

00:17 — DD2001
1CJ hung on a drop tracks request on equipment 6. A level three recovery was attempted and C10 and 1TA hung on drop tracks requests on equipment 11. A level zero deadstart was attempted and 1CJ hung again on a drop tracks request on equipment 6. Another level zero was performed and equipment 11 was reloaded and, after QREC was run, 1CJ again hung on a drop tracks on equipment 6. Another level zero was performed with equipment 6 off and equipment 11 had linkage errors. Another level zero was done and equipment 11 was reloaded again and, again, 1CJ hung on a drop tracks request on equipment 6. The two jobs that appeared to have their input files on equipment 6 were purged (equipment 6 is a removeable device!) and a level three recovery was successful at 02:33. The cause of this mess has not yet been determined.

Wednesday, 4 March — Cyber 74

07:25 — N.A.
The same two jobs that were purged the previous evening were re-activated by QREC and promptly hung 1CJ. A level three recovery was unsuccessful. A level zero deadstart brought the system up at 07:50. No dump was taken.

Thursday, 5 March — Cyber 74/172

13:47 — N.A.
Another power flucuation crashed both systems. Level zero recoveries were performed and the systems were back up by 14:24. No dumps were taken.

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Cyber 720 Deadstart Dump Analysis 2/20-3/7 - by B. E. Blasing

Mon, March 2, 22:07 DD15
CIO hung on trying to drop equipment 66 (which doesn't exist). A user was attempting to return a file which had a bad FST entry (byte 0 had been overwritten with the first track value in byte 1). No clues exist as to how this file got into this condition. An ECS error is suspected (a bad PPU load), but this seems unlikely.

Mon, March 2, 22:25 DD16
1TA hung dropping equipment 66 (deja' vu'). A different user, with a different file name had the identical bad FST entry. 1TA hung dropping the file when he timed out of the SALVARE file from the first crash.

Thur, March 5, 13:45 No Dump
A power fluctuation caused the Cyber 74 and ECS motor-generator to shut down, causing all three systems to crash.

B. Add some additional status flags and rename some existing flags, as follows:

'F' (Reformatting operation requested) would be changed to '*'
'T' (Temp files allowed) would be eliminated. This information would be available with all the other MSAL information on the "E,F" display (see above).
'P' would be added to indicate a PF utility interlock was on the device (PFLOAD,PFPACK).
'F' would be re-added (redefined) to indicate that CTI was installed on the device.
'D' would be added to indicate that a system deadstart file was installed on the device. All other existing status flags would remain although perhaps in a different order.

C. To make room (on the screen) for A & B, the MUP (multiunit position) and private device flag would be removed from this display. The MUP information exists on the "E,C" display and currently we do not have any private devices.

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NEW PARAMETER FOR ACCSTAT - by G. Jensen

Currently, if a user desires to run an ACCSTAT to determine his/her usage during the previous month there is a time constraint. The time "window" during which the information is available to the user runs roughly from the time of the last accounting run of the previous month to the time of the first accounting run of the current month. ACCSTAT files are replaced during each daily accounting run.

I propose to add the parameter "LM" to the ACCSTAT control statement which, when used, will force ACCSTAT to use the last (end-of-month) daily data file of the previous month as input to the program. In this way, users may obtain a total monthly ACCSTAT listing for the previous month at anytime during the current month.

This change would be made on the Cyber 74/172 and on MERITSS. Documentation will be modified accordingly.

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TELEX Login Changes - It's All in the Family - by K. C. Matthews

The immediate result of the proposal, if approved, will be as follows: on Sunday March 29, the message FAMILY:, will precede the request for the user number and the password. The user will simply hit the carriage return, which tells the system to use the default permanent file family. After that, the familiar NOS login sequence continues. It is intended that this change will take place on the 730 and the Cyber 74 only, not on the MERITSS machine. (For this article, we will call the two machines